

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-30. (Canceled).

31. (Currently Amended) A cooling plate for an iron- and steelmaking furnace comprising:

a copper cooling plate body with at least one cooling duct for a cooling medium, which extends essentially parallel with the back of said cooling plate body, and at least one preformed, externally accessible recess into which said cooling duct opens;

at least one connection piece for a cooling medium connection on the back of said cooling plate body; and

a formed piece that is fitted in said preformed, externally accessible recess in said cooling plate body so as to form a deflection surface for the cooling medium flowing from said connection piece into said cooling duct or from said cooling duct into said connection piece in axial extension of said connection piece.

32. (Currently Amended) The cooling plate according to claim 31, wherein said formed piece is arranged in an axial extension of said cooling duct, said deflection surface being formed by one of its end faces in axial extension of said connection piece.

33. (Currently Amended) The cooling plate according to claim 32, wherein:
said cooling plate body has a front side, a rear side and an end face;
said recess axially extends said cooling duct into said end face;
said connection piece opens from said rear side into said cooling duct;
said formed piece is a plug, which is inserted from said end face into said recess
and extends to the area where said connection piece opens into said cooling duct
to form said deflection surface for said cooling medium in axial extension of said
connection piece in this area.
34. (Previously Presented) The cooling plate according to claim 33, wherein said
plug has a bevelled end which forms said deflection surface.
35. (Currently Amended) ~~The cooling plate according to claim 31~~ A cooling
plate for an iron- and steelmaking furnace comprising:
a copper cooling plate body with at least one cooling duct for a cooling medium,
which extends essentially parallel with the back of said cooling plate body, and
at least one preformed, externally accessible recess into which said cooling duct
opens;
at least one connection piece for a cooling medium connection on the back of said
cooling plate body; and
a formed piece that is fitted in said preformed, externally accessible recess in said
cooling plate body so as to form a deflection surface for the cooling medium
flowing from said connection piece into said cooling duct or from said cooling
duct into said connection piece, wherein said formed piece is a prefabricated
transition piece, which has an internal, curved transition duct forming said
deflection surface.
36. (Previously Presented) The cooling plate according to claim 35, wherein in
that said transition piece and said recess have complementary shapes, said
transition piece being sealed from said outside in said recess.

37. (Previously Presented) The cooling plate according to claim 36, wherein a gap subsisting between said cooling plate body and said transition piece fitted in said recess is sealed from the outside by welding or soldering.
38. (Previously Presented) The cooling plate according to claim 35, wherein said cooling duct in said cooling plate body has a first cross-section and said connection piece a second cross-section, a transition from said first to said second cross-section taking place progressively in said transition duct of said transition piece.
39. (Previously Presented) The cooling plate according to claim 37, wherein said cooling duct in said cooling plate body has an oblong cross-section and said connection piece has a circular cross-section, said transition from said oblong to said circular cross-section taking place progressively in said transition duct of said transition piece.
40. (Previously Presented) The cooling plate according to claim 35 wherein said transition piece has a shoulder, which projects from said back of said cooling plate.
41. (Previously Presented) The cooling plate according to claim 35, wherein said connection piece is welded or soldered into said transition piece.
42. (Previously Presented) The cooling plate according to claim 35, wherein: said cooling plate body has a front side, a rear side and a thickness; and said recess is milled into said copper cooling plate body from said rear side, so that it has a depth that is smaller than the thickness of said cooling plate body.
43. (Previously Presented) The cooling plate according to claim 35, wherein: said cooling plate body has an end face; and said recess terminates in said end face.

44. (Previously Presented) The cooling plate according to claim 35, wherein said prefabricated transition piece is a mould casting made from copper or a copper alloy.
45. (Currently Amended) The cooling plate according to ~~claim 31~~claim 35, wherein said at least one cooling duct is a blind bore drilled into said cooling plate body.
46. (Currently Amended) The cooling plate according to ~~claim 31~~claim 35, wherein said cooling plate body is a continuously cast cooling plate, wherein said at least one cooling duct is formed as a continuous duct during continuous casting.
47. (Currently Amended) A process of manufacturing a cooling plate for an iron- and steelmaking furnace comprising following steps:
manufacturing a cooling plate body from copper or a copper alloy with at least one cooling duct for a cooling medium, which extends essentially parallel with the back of said cooling plate body, and at least one externally accessible recess into which said cooling duct opens;
providing at least one connection piece for a cooling medium connection on the back of said cooling plate body; and
fitting a formed piece in said preformed, externally accessible recess in said cooling plate body so as to form a deflection surface for the cooling medium flowing from said connection piece into said cooling duct or from said cooling duct into said connection piece in axial extension of said connection piece.
48. (Previously Presented) The process according to claim 47, wherein said formed piece is arranged in an axial extension of said cooling duct, said deflection surface being formed by one of its end faces.

49. (Currently Amended) The process according to claim 48, wherein:
said cooling plate body has a front side, a rear side and an end face;
said recess axially extends said cooling duct into said end face; and
said connection piece opens from said rear side into said cooling duct.
said formed piece is a plug, which is inserted from said end face into said recess
and extends to the area where said connection piece opens into said cooling duct
to form said deflection surface for said cooling medium in axial extension of said
connection piece in this area.
50. (Previously Presented) The process according to claim 49, wherein said plug
has a bevelled end which forms said deflection surface.
51. (Currently Amended) ~~The process according to claim 47A~~ a process of
manufacturing a cooling plate for an iron- and steelmaking furnace comprising
following steps:
manufacturing a cooling plate body from copper or a copper alloy with at least
one cooling duct for a cooling medium, which extends essentially parallel with
the back of said cooling plate body, and at least one externally accessible recess
into which said cooling duct opens;
providing at least one connection piece for a cooling medium connection on the
back of said cooling plate body; and
fitting a formed piece in said preformed, externally accessible recess in said
cooling plate body so as to form a deflection surface for the cooling medium
flowing from said connection piece into said cooling duct or from said cooling
duct into said connection piece, wherein said formed piece is a prefabricated
transition piece, which has an internal, curved transition duct forming said
deflection surface.
52. (Previously Presented) The process according to claim 51, wherein in that
said transition piece and said recess have complementary shapes, said transition
piece being sealed from said outside in said recess.

53. (Previously Presented) The process according to claim 52, wherein a gap subsisting between said cooling plate body and said transition piece fitted in said recess is sealed from the outside by welding or soldering.
54. (Previously Presented) The process according to claim 51, wherein said cooling duct in said cooling plate body has a first cross-section and said connection piece a second cross-section, a transition from said first to said second cross-section taking place progressively in said transition duct of said transition piece.
55. (Previously Presented) The process according to claim 54, wherein said cooling duct in said cooling plate body has an oblong cross-section and said connection piece has a circular cross-section, said transition from said oblong to said circular cross-section taking place progressively in said transition duct of said transition piece.
56. (Previously Presented) The process according to claim 51 wherein said transition piece has a shoulder, which projects from said back of said cooling plate.
57. (Previously Presented) The process according to claim 51, wherein said connection piece is welded or soldered into said transition piece.
58. (Previously Presented) The process according to claim 51, wherein: said cooling plate body has a front side, a rear side and a thickness; and said recess is milled into said copper cooling plate body from said rear side, so that it has a depth that is smaller than the thickness of said cooling plate body.
59. (Previously Presented) The process according to claim 51, wherein: said cooling plate body has an end face; and said recess terminates in said end face.

60. (Previously Presented) The process according to claim 51, wherein said prefabricated transition piece is a mould casting made from copper or a copper alloy.
61. (Currently Amended) The process according to ~~claim 47~~claim 51, wherein said at least one cooling duct is a blind bore drilled into said cooling plate body.
62. (Currently Amended) The process according to ~~claim 47~~claim 51, wherein said cooling plate body is continuously cast, and said at least one cooling duct is formed as a continuous duct during continuous casting.